

Protocol 17

Space Maintainers(SM) ³⁷

A space maintainer is an intra-oral appliance used to preserve arch length following the premature loss of primary teeth/tooth. This allows the permanent teeth to erupt unhindered into proper alignment and occlusion.

Basic concepts of space maintenance:

The role of Chronological age and Dental age is important when considering space maintenance.

1. Space closure occurs during the first 6 months after extraction. It is best to insert the appliance as soon as possible following the extraction.
2. Loss of space occurs primarily due to a tipping movement of teeth (mesially or distally). In the maxillary molar region, space loss occurs due to rotation in conjunction with mesial tipping.
3. Erupting premolars usually require 4-5 months to move through 1mm of bone as measured on a BW X-ray.

Indications:

1. The premature loss of primary molars to prevent the migration of the adjacent teeth, depending upon the teeth present and the arch length.
2. The premature loss of primary canines to prevent midline deviation and/or loss of arch length, perimeter and/or circumference.
3. The premature loss of primary incisors does not usually require the placement of a dental appliance for the maintenance of space because mesial movement of the adjacent teeth is not generally expected.

Contraindications:

1. A space maintainer is usually not necessary if there is a sufficient amount of space present to allow for eruption of permanent tooth/teeth.
2. A space maintainer may not be recommended if severe crowding exists, such that space maintenance is of minimal effect and subsequent orthodontic intervention is indicated.
3. A space maintainer may not be necessary if the succedaneous tooth will be erupting soon.

Types of SM Used in SOHP:-

1. Band and Loop:

Indicated for unilateral or bilateral loss of primary molars.

2. Crown and Loop:

Indicated for unilateral or bilateral loss of primary molars.

This type of SM restores a grossly decayed abutment tooth. Removal of appliance for adjustments is difficult.

3. Nance Appliance:

Indicated for loss of multiple primary teeth (bilaterally) in the maxillary arch.

Acrylic button provides increased stability. Appliance prevents tipping and rotation movement of molars.

4. Lower Lingual Arch (LLA):

Indicated for:

- Bilateral loss of primary teeth in the mandibular arch during transitional dentition.
- Maintenance of arch perimeter and incisor positions.

5. Removable Space Maintainers:-

Indicated for:

- Loss of multiple teeth bilaterally (anterior and/or posterior).
- In the absence of abutment teeth.

○ Procedure:

Clinical procedure for Band and Loop SM is as follows:

1. Select the smallest band that will fit snugly over the height of contour of the tooth.
2. First, seat band with digital pressure.
3. Then, fully seat the band over the tooth using band seater.
4. Using the band adapter, adapt the margins of the band to the tooth morphology.
5. Select the appropriate size of the impression tray, for both upper and lower arches.

6. Mix the impression material (Alginate) and adequately fill upper impression tray to avoid uneventful vomiting.
7. Tilt the patient head forward and downward to minimize the flow of the impression material into his throat.
8. Wait for 2 minutes, to allow the material to set.
9. Remove the tray carefully but firmly to avoid damaging it.
10. Evacuate the patient's mouth and make sure to remove any excess material left in his mouth.
11. Repeat the procedure for the lower arch.
12. Wash the impression under running water.
13. Remove the band from the tooth using band removing pliers.
14. Put the band back on the tray and stabilize it with a sticky wax on buccal and lingual margins at the occlusal aspect of the band.
15. Put the trays in a container containing a cold sterilant or according to the recommendations of the manufacturer.
16. Impressions covered with wet gauze should be sent to the lab with a referral letter.

Post SM construction procedures:

1. Try the appliance in the patient's mouth, considering not interfering with normal functions (with eating and speech).
2. Cement the appliance in place; make sure that the child can close his mouth normally after placement of an appliance.

Post insertion instructions:

It is very important to stress with the parents to bring the child for regular recall appointments so that the appliance can be removed before it interferes with the normal eruption of permanent teeth.